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EXAMINER

RIDER, JUSTIN W

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/733,793

Applicant(s)

DOMINACH ET AL.

Examiner

Justin W. Rider

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

***Response to Amendment***

1. In response to the Office Action mailed 11 April 2007, applicant submitted a response filed 11 August 2007, in which the applicant amended claims 1 and 11 without adding new matter.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 4, 6-8, 11 and 14 have been considered but are moot in view of the new ground(s) of rejection. It is further noted that one of the novel features of **Lai** is the fact that it discloses a general system that is applicable to any number of a plurality of configurations (col. 4, lines 48-54, *'Although the present invention has been described with reference to a specific embodiment, many modifications and variations therein will be readily apparent to those of working skill in this technological field. Accordingly, all such variations and modifications are included within the scope of the present invention as defined by the following claims.'*).

Regarding the Remarks as applied to the rejections of claim 2 beginning on p. 9 of Remarks that there fails to be a general knowledge in the art of computing that it would have been obvious to allow a plurality of components, being necessary to perform speech recognition (e.g. personal computer, handheld device, PDA, mobile phone), to reside on a single device; the examiner asserts that the combination of a) a speech recognition component (e.g. microphone and/or speech recognition software), b) a selection component (e.g. selection software with a keyboard), c) a plurality of disambiguation components (e.g. disambiguation software), and d) an output interface (e.g. monitor) appears expressly, if not inherently to be the physical makeup of

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an electronic computing device (e.g. personal computer, handheld device, PDA, mobile phone, etc...). and so therefore, the examiner maintains the original rejection under the same grounds.

Regarding the remarks concerning claim 3, dependent upon claim 1, it would have been obvious to attempt to provide the functionality that the systems of **Lai** or **Bennett** provide (which is a distributed system containing components including software, keyboard, microphone, pointing device, and display) within in a separate, distributed environment. One having ordinary skill in the art at the time of invention would recognize the desirability of improving the system of **Lai** by implementing into a separate, distributed network environment. Secondly, the above components (i.e. keyboard, microphone, pointing device and display) are all components that allow the system to perform in a multimodal manner.

Regarding the feature of presenting the user with alternatives in which to make a selection, **Haddock** discloses, Abstract, 'the referential input is a selection of elements from responses to previous queries (e.g. user inputs) [*which are in the form of words*]. The user selects various ones of these query cards for display on the screen at any given time and points to elements of the responses in the displayed cards as necessary to provide referential inputs for new queries.' This teaching allows the user to select an option from a plurality of alternatives for disambiguation purposes as limited by applicant's claim 5.

Regarding the limitations dealing with an attribute differentiation based on confidence, **Lai** discloses these features, col. 4, lines 42-47, '*Variants to the invention are possible. For example, in the flow chart of FIG. 3, color and/or attribute mapping may be carried out if the word/score pair is above, rather than below a threshold. Also, color mapping or attribute mapping may be carried out alone, rather than serially. That is, either color mapping or*

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*attribute mapping may be used alone.* ' The examiner feels the above citing along with the original sufficiently covers each and every limitation regarding the coloring of words based on some confidence measure.

Regarding the limitation concerning an interaction taking place using both a visual and voice mode, **Lai** discloses in at least FIG. 2, an acoustic signal (voice) and the ability to visually display words *with* confidence level (FIG.2, component 105) to the user in order to allow a response.

Regarding the operability of **Lai** regarding claims 12 and 13, FIG. 2 demonstrates, a) receiving an acoustic signal (speech input) from a user; b) Determining whether the speech input is ambiguous (i.e. applying a confidence score), c) performing a multimodal interaction with a user (e.g. user control, **140**, display, etc...). It is also noted that while a user is entering said acoustic signal, the GUI display application is concurrently running, allowing the user with visual feedback. **Lai** discloses the display of alternative ambiguous recognition results while **Haddock** merely discloses a display of alternatives allowing the user the ability to select an alternative from a plurality of alternatives, in which the two are combined in an obvious manner, as they are both solving a similar problem in an analogous art in which would provide a predictable, repeatable result.

Regarding the remarks of the rejections of claims 9-10, the citation of **Bond** as applied in the prior Office Action applies, in which **Bond** discloses a further reduction in the number of interpretations is reiterated until no further reductions are possible (i.e. iteratively).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 6-8, 11 and 14 rejected under 35 U.S.C. 102(b) as being anticipated by **Lai et al. (USPN 6,006,183)** referred to as **Lai** hereinafter.

*Claims 1 and 11*: **Lai** discloses a system and method for speech recognition disambiguation using multimodal interaction with an application, comprising:

- i. a speech recognition component that receives recorded audio or speech input (col. 3, lines 20-22) and generates:
- ii. one or more tokens (*words*) corresponding to the speech input (col. 3, lines 25-30, *'The recognition function (190) translates the acoustic signal in to text, i.e. one or more words, '*); and
- iii. for each of the one or more tokens, a confidence value indicative of the likelihood that the a given token correctly represents the speech input (col. 3, lines 29-30, *'each word is assigned a confidence level, '*);
- iv. a selection component that identifies, according to a selection algorithm, which two or more tokens are to be presented to a user as alternatives, in which said alternatives are words or tokens (FIG. 1, 'word 1', 'word 2', 'word 3'; col. 3, lines 45-50, *the processes described select pairs and code them based on both preset and user parameters.*);
- v. one or more disambiguation components that perform said multimodal interaction (i.e. speech input, display output, and user control input) with the user to present the alternatives to

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the user and to receive a selection of alternatives from the user, wherein the multimodal interaction allows input and output in voice and visual modes (e.g. speech input and GUI display output), (col. 3, lines 40-42)); and

vi. an output interface that presents the selected alternative to an application as input (col. 3, lines 60-64, *'the pairs are then displayed on an output device (105), '*).

Claim 4: Lai discloses a system as per claim 1 above, wherein the one or more disambiguation components perform said interaction by presenting the user with alternatives in a visual mode (col. 3, lines 60-64), and by receiving the user's selection in a visual mode (col. 4, lines 11-15, *'The graphical user application (150) may accept information from the user control (140) to control the threshold... '*).

Claim 6: Lai discloses a system as per claim 1 above, wherein the one or more disambiguation components perform said interaction by presenting the user with alternatives in a visual mode (col. 3, lines 60-64, *represented by a visual display interface that allows the user to interact with the system.*), and by receiving the user's selection in a visual mode (col. 4, lines 11-15, *'The graphical user application (150) may accept information from the user control (140) to control the threshold... '*).

Claim 7: Lai discloses a system as per claim 1 above, wherein the selection component filters the one or more tokens (*words*) according to a set of parameters (col. 3, lines 36-39).

Claim 8: Lai discloses a system as per claim 7 above, wherein the set of parameters is user specified (col. 3, lines 36-39).

Claim 14: **Lai** discloses a system as per claim 11 above wherein the interaction comprises the user selecting from among the plural alternatives using visual input (col. 3, lines 60-64, *represented by a visual display interface that allows the user to interact with the system.*).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lai**.

Claim 2: **Lai** discloses a system as per claim 1 above, however failing to specifically disclose wherein the disambiguation components and the application reside on a single computing device. The examiner is taking Official Notice that based on the claim sets and figures (*specifically Fig. 1*), it would have been obvious to one having ordinary skill in the art to determine that this system can also be implemented on a single device. It is inherent within the scope of the invention, as well as in the art, that such computing systems must either reside on a single computing device or on a plurality of devices (e.g. distributed system).

Therefore, based on the teachings of **Lai**, it would have been obvious to one having ordinary skill in the art at the time of invention that a speech recognition disambiguation system could be implemented on a single computing device because it reduces the complexity and allows a user to use the device without having to connect to another separate, distributed device, which would require a communications link (e.g. wireless communications, Internet).



7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lai** in view of **Bennett et al. (USPN 6,633,846)** referred to as **Bennett** hereinafter.

Claim 3: **Lai** discloses a system as per claim 1 above, however failing to, but **Bennett** does, specifically disclose wherein the disambiguation components and the application reside on separate (*distributed*) computing devices (Fig. 1; col. 6, lines 1-3, '*to provide a word and phrase recognition system that is flexibly and optimally distributed across a client/platform computing architecture, '*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Bennett** in the system of **Lai** because it provides an environment that achieves improved accuracy, speed and uniformity for a wide group of users (col. 6, lines 4-5).

8. Claims 5 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lai** in view of **Haddock et al. (USPN 5,265,014)** referred to as **Haddock** hereinafter.

Claim 5: **Lai** discloses a system as per claim 4 above wherein alternatives are presented to the user in a visual form (col. 3, lines 60-64, *represented by a visual display interface that allows the user to interact with the system.*), however failing to, but **Haddock** does, disclose allow the user to select from among the alternatives using both a visual input as well as a voice input (col. 3, lines 13-15, '*Similarly, a touch screen, speech recognition apparatus, or other pointer...may be used to receive the referential input.*').

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Haddock** in the system of **Lai** because it has a user interface that facilitates natural language communication between a user and a computer database by providing means for a user to remove a referential (*input*) ambiguity by pointing to a displayed textual reference (col. 2, lines 54-59).

Claim 12: **Lai** discloses a system as per claim 11 above wherein alternatives are presented to the user in a visual form (col. 3, lines 60-64, *represented by a visual display interface that allows the user to interact with the system.*), however failing to, but **Haddock** does, disclose allow the user to select from among the alternatives using both a visual input as well as a voice input (col. 3, lines 13-15, *'Similarly, a touch screen, speech recognition apparatus, or other pointer...may be used to receive the referential input.'*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Haddock** in the system of **Lai** because of the reasons outlined above.

Claim 13: **Lai** discloses a system as per claim 12 above in which alternative forms of a user input are presented, however failing to, but **Haddock** does, specifically disclose wherein a user selects from a plurality of presented alternatives in order to disambiguate a natural language input to a computer system (Abstract; col. 3, lines 24-28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Haddock** in the system of **Lai** because of the reasons outlined above.

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9. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lai** in view of **Bond et al. (USPN 6,539,348)** referred to as **Bond** hereinafter.

Claim 9: **Lai** discloses a system as per claim 1 above, however failing to, but **Bond** does disclose wherein an iterative process is used in order to disambiguate and narrow down possible interpretations of a natural language input (col. 2, lines 14-16, *'Further reduction in the number of syntactic interpretations is made possible...reiterated until no further reductions, '*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Bond** in the system of **Lai** because it allows machines the ability to recognize context of words through a rigorous method of narrowing down possibilities providing a more accurate depiction of a user input (col. 1, lines 10-25).

Claim 10: **Lai**, in view of **Bond** discloses a system as per claim 9 above, however failing to specifically disclose wherein the number of iterative stages is limited to a specified number (col. 2, lines 14-16, *'until no further iterations, '*). **Bond** discloses wherein it would be advantageous to continue the disambiguation iteration until no further narrowing is possible, so therefore, the number of iterations is specified by the amount of ambiguity within an input token. This would be an obvious step in order to produce a repeatable result that would avoid the situation where an inordinate amount of disambiguous results are supplied to the user. N-best disambiguation schemes are well known throughout the art of speech recognition and it would have been obvious to try and improve upon the system of **Lai**, in view of **Bond** in such a way that would only provide a user with a manageable number of alternative possibilities.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to include the teachings of **Bond** in the system of **Lai** because of the reasons outlined above.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin W. Rider whose telephone number is (571) 270-1068. The examiner can normally be reached on Monday - Friday 7:30AM - 5:00PM.

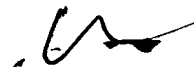
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J.W.R.

16 October 2007



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